

NOTES ON THE SOLANACEAE OF SOUTHERN BRAZIL

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In revising the Solanaceae of the state of Santa Catarina, Brazil, we find it desirable to place the resultant novelties on record as soon as possible. Later, we plan to publish the complete revision as a unit of the "Flora Catarinense" edited by Pe. Raulino Reitz, director of the Herbário "Barbosa Rodrigues."

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SOLANUM L.

For convenience of reference, the new species in Solanum are grouped here by sections as they now occur in the manuscript of the "Flora Catarinense." Since we find that no system exactly fits our ideas of the relationships involved, we have made certain alterations on the basic system of Dunal following later authors or our own findings. A translation of this part of the manuscript follows:

KEY

1. Anthers oblong, ellipsoid or obovoid, the pores large; plants always unarmed.....Subgenus 1 - Solanum
1. Anthers attenuate, the pores small; plants often spinose.  
Subgenus 2 - Leptostemonum

Subgenus 1 - SOLANUM

1. Leaves pinnatisect, the leaflets petiolulate but the petioles sometimes alate; pedicels distinctly articulate; plants herbaceous, erect.....Section 1 - Tuberarium
1. Leaves usually not more than pinnatifid (when pinnatisect, the plants then scandent and woody); pedicels usually not articulate.
2. Calyx truncate or with 5 (4-9) divisions or points, never with 10 points.

3. Plants scandent, woody vines; inflorescences mostly terminal and corymbose.....Section 3 - Jasminosolanum
3. Plants erect, herbs, shrubs, or small trees.
4. Trichomes simple or absent.
5. Plants herbaceous or subherbaceous; inflorescences lateral, extra-axillary, umbelliform or short-racemose, usually simple; corolla not more than 12 mm in diameter.  
Section 2 - Solanum
5. Plants woody, shrubs or small trees; inflorescences opposite the leaves, racemose.  
Section 4 - Leiodendron
4. Trichomes at least in part stellate or dendritic.
6. Fertile flower single; inflorescences subumbellate, few-flowered, opposite the leaves or extra-axillary; trichomes dendritic.....Section 5 - Pseudocapsicum
6. Fertile flowers always more than one; trichomes dendritic or stellate.
7. Inflorescences opposite the leaves, simple and racemose in the species of Santa Catarina; trichomes stellate, never dendritic.....Section 6 - Indubitaria
7. Inflorescences terminal or extra-axillary, or when opposite the leaves, then the trichomes dendritic; trichomes either stellate or dendritic.  
Section 7 - Anthoresis
2. Calyx with 10 points from a truncate apex in the species of Santa Catarina.....Section 8 - Lycianthes

#### Subgenus 2 - LEPTOSTEMONUM

1. Plants unarmed; inflorescences simple or bifurcate the flowers secund; pedicels articulate near the base.  
Section 9 - Cyphomandropsis
1. Plants spinose or the inflorescences corymbosely branched or the pedicels not articulate.
2. Upper side of the leaf glabrous or with simple trichomes.
3. Spines all stout and curved; plants scandent or prostrate; leaves mostly lobed or pinnatisect.  
Section 10 - Micracantha
3. Spines for the most part straight and slender or lacking; plants erect.....Section 11 - Simplicipilum
2. Upper side of the leaf with some stellate trichomes at least when young.
4. Lobes of the corolla narrow, as long as the tube or nearly so.....Section 12 - Torvaria
4. Lobes of the corolla very broad, much shorter than the tube.
5. Flowers uniform.....Section 13 - Asterotrichotum
5. Flowers dimorphic.....Section 14 - Andromonoecum

Subgenus 1. SOLANUM. Solanum section Pachystemonum Dunal in DC. Prodr. 13, pt. 1: 28, 31. 1852.

Section 1. TUBERARIUM (Dunal) Bitter, Fedde Rep. Spec. Nov.

10: 531. 1912; Correll, The Potato and its wild relatives, section Tuberarium of the Genus Solanum, i-xx, 1-606, figs. 1-212. 1962. Solanum subsection Tuberarium Dunal in DC. Prodr. 13, pt. 1: 28, 31. 1852.

Section 2. SOLANUM. Solanum subsection Morella Dunal in DC. Prodr. 13, pt. 1: 28, 44. 1852.

Section 3. JASMINOSOLANUM Bitter ex Seithe - v. Hoff, Bot. Jahrb. 81: 291. 1962. Solanum subsection Dulcamara Dunal in DC. Prodr. 13, pt. 1: 28, 68. 1852.

Section 4. LEIODENDRON (Dunal) Bitter, Bot. Jahrb. 54: 500. 1917. Solanum subsection Micranthes 2° Anthopleuris §1 Oppositifolia \*\*\*Leiodendra Dunal in DC. Prodr. 13, pt. 1: 29, 137. 1852.

Section 5. PSEUDOCAPSICUM (Med.) Bitter, Bot. Jahrb. 54: 497. 1917. Pseudocapsicum Med. Phil. Bot. 1: 122. 1789. Solanum subsection Micranthes 2° Anthopleuris §2 Pseudocapsicum Dunal in DC. Prodr. 13, pt. 1: 29, 150. 1852.

Section 6. INDUBITARIA (Dunal), comb. nov. Solanum subsection Micranthes 2° Anthopleuris §1 Oppositifolia \*Indubitaria Dunal in DC. Prodr. 13, pt. 1: 29, 123. 1852.

Section 7. ANTHORESIS (Dunal) Bitter, Bot. Jahrb. 54: 489. 1917. Solanum subsection Micranthes 1° Anthoresis Dunal in DC. Prodr. 13, pt. 1: 29, 95. 1852.

Section 8. LYCIANTHES (Dunal) Wettstein in Engler & Prantl, Pflanzenfam. 4, Abt. 3b: 22. 1891. Solanum subsection Lycianthes Dunal in DC. Prodr. 13, pt. 1: 29, 156. 1852. Solanum subgenus Lycianthes (Dunal) Bitter, Bot. Jahrb. 55: 89. 1917. Lycianthes (Dunal) Hassler, Ann. Cons. & Jard. Bot. Genève 20: 173. 1917.

Subgenus 2. LEPTOSTEMONUM (Dunal) Bitter, Bot. Jahrb. 55: 69: 1917. Solanum section Leptostemonum Dunal in DC. Prodr. 13, pt. 1: 29, 183. 1852.

Section 9. CYPHOMANDROPSIS Bitter, Fedde Rep. Spec. Nov. 12: 461. 1913. Cyphomandra sensu Sendtn. in Mart. Fl. Bras. 10: 113. 1846; sensu Dunal in DC. Prodr. 13, pt. 1: 387. 1852, both in part, not as to the type species of Martius.

Section 10. MICRACANTHA (Dunal) Bitter ex Marz, in Hegi, Illustr. Fl. v. Mittel-Europa 5, pt. 4: 2584. 1927. Solanum section Leptostemonum subsection Euleptostemonum §2 Juripeba \*\*\*Micracantha Dunal in DC. Prodr. 13, pt. 1: 30, 216. 1852.

Section 11. SIMPLICIPILUM Bitter, Fedde Rep. Spec. Nov. Beiheft. 16: 147. 1923.

Section 12. TORVARIA (Dunal) Bitter, Bot. Jahrb. 57: 250. 1922. Solanum subsection Torvaria Dunal in DC. Prodr. 13, pt. 1: 30, 258. 1852.

Section 13. ASTEROTRICHOTUM (Dunal), comb. nov. Solanum subsection Asterotrichotum Dunal in DC. Prodr. 13, pt. 1: 30, 282. 1852.

Section 14. ANDROMONOECUM Bitter, Fedde Rep. Spec. Nov. 16: 157. 1923.

SOLANUM (Solanum) DELICATULUM, sp. nov.

S. americano Mill. proximum sed calyce majore corollam subae-

quante, inflorescentia 1-2-flora differt.

PLANTA herbacea vel suffruticosa, ad 1 m alta; ramis gracilibus, paulo flexuosis, laevibus, pallide viridibus, apicibus exceptis glabris; FOLIIS solitariis, breviter petiolatis, lanceolatis vel ellipticis, basi attenuatis, apice late acutis ad acuminate, 10 cm longis, 3 cm latis, membranaceis, mox glabris; INFLORESCENTIIS lateralibus, extra-axillaribus, 1-2-floris; pedunculo 2-3 mm longo, gracillimo, fructifero paulo amplificato; PEDICELLIS per anthesin 2-5 mm longis, fructiferis ad 10 mm, minute pubescentibus; CALYCE 4 mm alto, glabro, profunde diviso, lobis anguste triangularibus; COROLLA calycem subaequante, alba, valde imperfecte cognita; ANTHERIS oblongis; BACCA globosa, 10 mm diametro. Pl. I, fig. 1: Branch x 1/2; fig. 2: Flower x 5; fig. 3: Stamen x 5.

BRAZIL: Santa Catarina: Itajaí: Cunhas, alt. 10 m, February 8, 1955, Klein 1131 (HBR, type; US photo). Same, March 10, 1955, Klein 1203 (HER).

SOLANUM (Solanum) MAIORANTHUM, sp. nov.

S. americano Mill. proximum sed inflorescentiis plerumque breviter racemosis vel bifurcatis, antheris subduplo majoribus differt.

PLANTA herbacea vel suffruticosa, partibus juvenilibus pilis pallidis multicellularibus vestitis; ramis gracilibus, paulo flexuosis, pallide viridibus, in lineis decurrentibus persistente pilosis; FOLIIS solitariis binisque, vix petiolatis, lanceolatis vel raro ovatis, attenuatis praecipue ad basin versus, 5-13 cm longis, integris vel raro grosse dentatis, membranaceis, pubescentibus praecipue in nervis; INFLORESCENTIIS lateralibus, plerumque paulo infra folia positis, breviter racemosis, plerumque simplicibus, raro bifurcatis, paucifloris; pedunculo 12-26 mm longo; PEDICELLIS per anthesin 5 mm longis, fructiferis amplificatis; CALYCE 1.5 mm alto, lobis ovatis, inaequalibus; COROLLA 12 mm diametro, alba, plusquam 2/3 lobata, lobis acutis; STAMINIBUS aequalibus; filamentis intus pubescentibus; antheris oblongis, 2.5-3.2 mm longis, apice porosis dein longitudinaliter dehiscens; STYLO stamina valde superante; stigmatibus angusta, obtusa; BACCA globosa, 4 mm diametro. Pl. I, fig. 4: Leaf x 1/2; fig. 5: Flower x 1.

BRAZIL: Santa Catarina: Lauro Müller: Lower and middle slopes of Rio do Rastro, 20 km west of Lauro Müller, alt. 700-1000 m, April 3, 1957, Smith & Klein 12338 (US, type; HBR, R).

Araranguá: Serra do Pilão, alt. 800 m, Reitz 3423 (HBR).

Joinville: Roadside, Estrada Dona Francisca, alt. 550 m, August 23, 1957, Reitz & Klein 4654 (HBR, US). Same, October 4, 1957, Reitz & Klein 5029 (HBR, US). Same, woods, November 6, 1957, Reitz & Klein 5597 (HBR, US).

Lajes: Ruderal, Santo Antonio, near Passo de Socorro, Estrada de Rodagem Federal km 67-71, south of Lajes, alt. 800-900 m, January 14, 1957, Smith & Reitz 9966 (US). Fazenda Santa Ana, January 1961, H. Moreira & E. Moreira 239 (Univ. Paraná, US). Araucaria forest, Anita Garibaldi, alt. 700 m, April 13, 1963, Reitz

& Klein 14782 (HBR, US).

SOLANUM (Leiodendron) REITZII, sp. nov.

S. trachytrichio Bitter proximum sed foliis semper solitariis supra fere omnino glabris, staminibus valde inaequalibus differt.

ARBOR 8 m alta; ramis juvenilibus pilis brevibus subpatentibus citrinis vestitis; cortice pallido, rimoso; FOLIIS solitariis, 10-17 mm petiolatis, oblongis vel anguste ellipticis, basi apiceque acutis, 10 cm longis, 4 cm latis, tenue coriaceis, nervo mediano excepto supra glabris, subtus dense pubescentibus; INFLORESCENTIIS oppositifoliis, 15 mm pedunculatis, simplicibus, racemosis, paucifloris; PEDICELLIS gracillimis, 8 mm longis; CALYCE late campanulato, 2 mm alto, paulo lobato, lobis late rotundatis, apiculatis; COROLLA 14 mm diametro, apicibus exceptis glabra, ultra 2/3 divisa, lobis ellipticis, acutis; FILAMENTIS valde inaequalibus; antheris anguste obovoideis, in flore unica 2.5-3.5 mm longis; STYLO stamina subaequante, curvato. Pl. I, fig. 6: Leaf and inflorescence x 1/2; fig. 7: Young flower x 1; fig. 8: Adult flower x 1; fig. 9: Stamens x 2.

BRAZIL: Santa Catarina: Rio do Sul: Araucaria forest, Alto de Matador, alt. 800 m, December 30, 1958, Reitz 4092 (US, type; HBR).

SOLANUM (Leiodendron) DUSENII, sp. nov.

S. caavurana Vell. proximum sed foliis angustioribus, inflorescentiis paucifloris, pedicellis apice valde incrassatis differt.

PLANTA fruticosa (?), minute sparseque pallido-pilosa; ramis ultimis gracilibus, flexuosis, eorum cortice brunneo, parum rimoso; FOLIIS solitariis vel binis valde inaequalibusque, subsessilibus, ellipticis vel lanceolatis, basi apiceque attenuatis, 8 cm longis, 3 cm latis, submembranaceis, supra glabris, subtus in nervis sparse pallido-pilosis; INFLORESCENTIIS oppositifoliis, 3 mm pedunculatis, racemosis, brevissimis, 2-4-floris; PEDICELLIS 2 cm longis, gracilibus, apice valde incrassatis, basi articulatibus; CALYCE late campanulato, 3 mm alto, glabro, ca. 1/2 lobato, lobis late rotundatis apiculatisque; COROLLA 16 mm diametro, profunde divisa, lobis ellipticis; STAMINIBUS aequalibus; filamentis curtissimis; antheris oblongis, 4 mm longis; STYLO stamina valde superante; BACCA subglobosa, 7 mm diametro. Pl. I, fig. 10: Leaf and inflorescence x 1/2; fig. 11: Flower x 1; fig. 12: Stamen x 2

BRAZIL: Paraná: Without further locality, February 1, 1904, Dusén 3361 (US, type; R).

Santa Catarina: Without further locality, June 30, 1885, Schwacke (R, US, fruit only).

SOLANUM (Leiodendron) MICRORBITUM, sp. nov.

S. caavurana Vell. proximum sed foliis dimorphis minoribus suborbicularibus, inflorescentiis paucifloris differt.

ARBOR parva, ad 4 m alta; ramis ultimis rectis vel paulo flexuosis, gracillimis, lineis elevatis praeditis, pilis simplicibus multicellularibus sparsissime vestitis; FOLIIS fere omnibus binis

valde inaequalibusque, majoribus 15 mm petiolatis, lanceolatis, basi apiceque attenuatis, 75 mm longis, 25 mm latis, minoribus suborbicularibus, 30 mm diametro, ambo membranaceis, supra glabris, subtus in axillis nervorum majorum pubescentibus; INFLORESCENTIIS lateralibus, oppositifoliis, 9 mm pedunculatis, simplicibus, brevibus, paucifloris; PEDICELLIS 15 mm longis, gracillimis; CALYCE campanulato, 3 mm alto, lobis brevibus, rotundatis obtuso-apiculatisque; COROLLA 18 mm diametro, alba, lobis lanceolatis, acutis, ultra 7 mm longis; STAMINIBUS aequalibus; filamentis 1 mm longis, basi connatis; antheris oblongis, fere 4 mm longis; BACCA ignota. Pl. I, fig. 13: Branch x 1/2; fig. 14: Flower x 1; fig. 15: Stamens x 2.

BRAZIL: Santa Catarina: São Francisco do Sul: Forest, Três Barras, Garuva, alt. 200 m, February 28, 1958, Reitz & Klein 6506 (US, type; HBR).

SOLANUM (Leiodendron) PABSTII, sp. nov.

S. inaequale Vell. proximum sed inflorescentiis valde ramosis, staminibus aequalibus differt.

ARBOR 3-10 m alta, omnino glabra; ramis irregulariter angulatis; cortice pallido-cinereo; FOLIIS solitariis, 4-5 mm petiolatis, lanceolatis, basi cuneatis, apice attenuatis et plus minusve involuto-subulatis, 6 cm longis, 2 cm latis, tenue coriaceis; INFLORESCENTIIS terminalibus, 2 cm pedunculatis, late corymbosis, multiramosis, 6-8 cm latis; PEDICELLIS gracilibus, 10-16 mm longis, apice haud incrassatis; CALYCE late campanulato, 3 mm alto, 1/2 lobato, lobis late ovatis vel semiorbicularibus, apiculatis; COROLLA alba, 16 mm diametro, ultra 2/3 divisa, lobis ovato-lanceolatis, acutis; STAMINIBUS aequalibus; filamentis 1.5 mm longis; antheris anguste obovoideis, 4 mm longis; STYLO gracili, stamina bene superante; stigmata anguste clavato, bilobato; BACCA ignota. Pl. I, fig. 16: Branch x 1/2; fig. 17: Young flower x 1; fig. 18: Adult flower x 1; fig. 19: Stamen x 2.

BRAZIL: Santa Catarina: Lajes - São Joaquim: Bank of the Rio Lavatudo, alt. 1050 m, October 22, 1961, Pabst 6200 & Pereira 6373 (US, type; HB).

Santa Cecilia: BR-2, near Santa Cecilia, alt. 1100 m, October 21, 1961, Pabst 6123 & Pereira 6296 (HB, US).

SOLANUM (Leiodendron) CATARACTAE, sp. nov.

S. inaequale Vell. proximum sed inflorescentiis ca. 5-floris, pedunculo compresso, staminibus aequalibus differt.

PLANTA fruticosa, humilis, glabra; ramis ultimis compressis; cortice persistente, juvenile atro fulgenteque; FOLIIS solitariis, breviter petiolatis, lanceolatis, acutis, basi attenuatis, 60 mm longis, 17 mm latis, subcoriaceis, concoloribus; INFLORESCENTIIS extra-axillaribus, simplicibus, corymbiformibus, paucifloris; pedunculo 8-10 mm longo, compresso; PEDICELLIS gracilibus, 12-14 mm longis; CALYCE 3 mm alto, crasso, profunde diviso, lobis late ovatis, obtusis; COROLLA fere 2 cm diametro, ultra 2/3 lobata, lobis ovatis, obtusis; STAMINIBUS aequalibus; filamentis brevissimis; antheris oblongis, basi abrupte angustatis, 5 mm

longis; STYLO stamina paulo superante; stigmatē clavato, bilobato; BACCA ignota. Pl. II, fig. 1: Branch x 1/2; fig. 2: Calyx x 1; fig. 3: Stamens x 2.

BRAZIL: Santa Catarina: Bom Retiro: By base of waterfall of the Rio Canoas, Campo dos Padres, alt. 1300-1400 m, November 22, 1956, Smith & Klein 7843 (US, type; HBR, R).

SOLANUM (Pseudocapsicum) PAVIMENTI, sp. nov.

S. difloro Vell. proximum sed axibus subglabris, foliis acuminatis, floribus glabris differt.

PLANTA herbacea (! Reitz & Klein), ramosa sed verisimiliter suffruticosa; ramis gracilibus, suffruticosis; cortice virescente, ex sicco minute rugoso, e pilis simplicibus dendriticisque pallido-pubescentibus; FOLIIS solitariis vel binis valde inaequalibus, majoribus 2-3 mm petiolatis, lanceolatis vel ellipticis, basi attenuatis et paulo asymmetricis, apice acutis, 60 mm longis, 23 mm latis, submembranaceis, subtus in nervis majoribus pilis dendriticis paucis praeditis, alibi glabris, subconcoloribus, foliis minoribus ca. 5 mm longis, late ellipticis; INFLORESCENTIIS sessilibus, 1-6-floris; floribus fasciculatis, flore unica fertili; PEDICELLIS suberectis, 5 mm longis, gracilibus sed apice incrassatis, minute pubescentibus; CALYCE 3 mm alto, minute sparseque pubescente, lobis anguste lanceolatis, late acutis, 2 mm longis, 0.5 mm latis; COROLLA alba, 8 mm diametro, profunde lobata; STAMINIBUS subaequalibus; filamentis curtissimis; antheris oblongis, 2.5 mm longis; STYLO stamina bene superante. Pl. II, fig. 4: Leaf pair; fig. 5: Branch x 1/2; fig. 6: Young flower x 2; fig. 7: Stamen x 2.

BRAZIL: Santa Catarina: Papanduva: Forest, Lajeado, alt. 800 m, January 3, 1962, Reitz & Klein 11438 (US, type; HBR).

SOLANUM (Indubitaria) SCHWACKEANUM, sp. nov.

S. gemello Mart. ex Sendtn. parum proximum sed foliis elongatis basi cuneatis, calyce subduplo minore fructifero vix amplificato differt.

PLANTA fruticosa; ramis gracilibus, ultimis ipsis lignosis; cortice cinereo, minute verruculoso-stellato; FOLIIS solitariis vel binis maxime inaequalibus, majoribus breviter petiolatis, lanceolatis, basi cuneatis, apice longe attenuatis, 9-15 cm longis, 2-5 cm latis, concoloribus, membranaceis, minute obscureque stellatis; INFLORESCENTIIS oppositifoliis, subumbellatis cum axibus obscuris, raro ramosis, simplicibus ca. 8-floris, minute stellatis; pedunculo brevissimo; PEDICELLIS patentibus, gracillimis, fructiferis 15 mm longis; CALYCE campanulato, 2.5 mm alto, ca. 1/2 diviso, lobis ovatis, acutis; COROLLA alba, 14 mm diametro; STAMINIBUS aequalibus; filamentis brevissimis; antheris linearibus, 4 mm longis; STYLO stamina bene superante; BACCA globosa, 7 mm diametro. Pl. II, fig. 8: Branch x 1/2; fig. 9: Trichome x 25; fig. 10: Calyx and fruit x 1; fig. 11: Stamen x 2.

BRAZIL: Santa Catarina: Blumenau: Near Blumenau, 1884, Schwacke 175 (US, type; R). Same, March 1888, Ule 698 and 700 (US).

Without municipio: April 1869, Fritz Mueller (K).

Ibirama: Horto Florestal I. N. P., alt. 450 m, April 12, 1956, Reitz & Klein 3086 (HBR, US); 3097 (HBR, US). Same, May 18, 1956, Klein 1984 (HBR, US).

Itajaí: Fritz Mueller 228 (R, US).

Rio do Sul: Serra do Matador, alt. 500 m, March 12, 1959, Reitz & Klein 8536 (HBR, US). Same, alt. 400 m, March 14, 1959, Reitz & Klein 8601 (HBR, US).

SOLANUM (Indubitaria) SUBSYLVESTRIS, sp. nov.

S. leontopodio Dunal proximum sed inflorescentia elongata quam pedunculo brevi multo longiore differt.

PLANTA fruticosa, 2 m alta; ramis gracilibus, flexuosis, juvenilibus pilis minutis stipitato-stellatis subdense vestitis; cortice virescente, ex sicco rugoso-striato; FOLIIS solitariis et binis, majoribus 6-12 mm petiolatis, ovato-lanceolatis, basi apiceque attenuatis, basi asymmetricis, ultra 16 cm longis et 6 cm latis, tenuibus, utrinque stellato-tomentosis, infra valde pallidioribus, foliis minoribus minus quam 1/4 majorum, late ellipticis, apice rotundatis; INFLORESCENTIIS oppositifoliis, simplicibus, racemosis, laxe multifloris, axi gracili, 3 cm longo, stellato-tomentosis; pedunculo 5-10 mm longo; PEDICELLIS patentibus, gracillimis, 15-20 mm longis; CALYCE campanulato, fructifero amplificato et 16 mm diametro, 1/2-2/3 lobato, lobis ovatis, acutis; COROLLA alba, 22 mm diametro, plusquam 1/2 lobata, lobis lanceolatis, acutis; STAMINIBUS aequalibus, filamentis ca. 1 mm longis, subliberis; antheris clavato-oblongis, 2.5 mm longis; STYLO stamina multo superante. Pl. II, fig. 12: Branch x 1/2; fig. 13: Trichome x 5; fig. 14: Flower x 1; fig. 15: Stamens x 2.

BRAZIL: Santa Catarina: Canoinhas: Border of woods, Salseiro, alt. 750 m, September 15, 1962, Klein 3006 (US, type; HBR).

Lebon Regis: Border of woods, Rio dos Patos, alt. 900 m, July 13, 1962, Reitz & Klein 13223 (HBR, US).

SOLANUM (Anthoresis) KLEINII, sp. nov.

E pilis dendriticis S. verbascifolio L. proximum sed statura humile, foliis multo minoribus subconcoloribus, inflorescentiis simplicibus valde differt.

PLANTA fruticosa, 3-5 dm alta, e basi ramosa, basi ipse valde incrassata; ramis e pilis dendriticis elongatis citrinis dense tomentosis; FOLIIS densis et haud distincte solitariis vel binis, breviter petiolatis, ellipticis, basi apiceque acutis, 5-6 cm longis, subcoriaceis, subconcoloribus, supra nervis majoribus impressis exceptis glabris, subtus omnino sparse tomentosis inter nervos prominentes; INFLORESCENTIIS axillaribus, sessilibus vel ad 13 mm pedunculatis, 1-2-floris, dense tomentosis; PEDICELLIS 10-15 mm longis; CALYCE late campanulato, 5 mm alto, ca. 1/2 lobato, lobis late ovatis; COROLLA 20 mm diametro, alba, 2/3 lobata, lobis lanceolatis, acutis; STAMINIBUS aequalibus; filamentis ca. 1 mm longis, basi breviter connatis; antheris oblongis, 5 mm longis; STYLO stamina bene superante. Pl. II, fig. 16: Branch x 1/2; fig. 17: Trichome x 25; fig. 18: Calyx x 1; fig. 19: Flower x 1; fig. 20: Stamen x 2.



BRAZIL: Santa Catarina: Campo Alegre: Campo and araucaria forest, 4 km south of Campo Alegre on the road to Jaraguá do Sul, alt. 900-1000 m, November 6, 1956, Smith & Klein 7321 (US, type; HBR, R).

SOLANUM (Anthoresis) CASSIOIDES, sp. nov.

S. kleinii Smith & Downs simulans sed pilis stellatis brevibus, axibus vetustis glabris, juvenilibus sparse vestitis, foliorum laminis glabris differt.

PLANTA herbacea (! Reitz); ramis vetustis glabris, juvenilibus sparse minuteque stellatis, parum lignosis; cortice persistente, atro, ex sicco rugoso; FOLIIS solitariis, 10 mm petiolatis, ellipticis, subacutis, basi attenuatis, 11 cm longis, 5 cm latis, petiolo stellato excepto adultis glabris, tenue coriaceis, concoloribus, supra subfulgentibus; INFLORESCENTIIS extra-axillaribus, 7-10 mm pedunculatis, paucifloris; PEDICELLIS fasciculatis, gracillimis, 10-15 mm longis, stellatis; CALYCE subcampanulato, 4 mm alto, 2/3 lobato, lobis ovatis, acutis; COROLLA alba, 28 mm diametro, 2/3 lobata, lobis ovatis, subacutis; STAMINIBUS aequalibus; filamentis 2.5 mm longis, alto-connatis; STYLO gracili, stamina superante, pubescente; BACCA ignota. Pl. III, fig. 1: Branch x 1/2; fig. 2: Trichome x 25; fig. 3: Calyx x 1; fig. 4: Corolla and stamens x 1.

BRAZIL: Santa Catarina: Lauro Müller - Urussanga: Araucaria forest, Pinhal da Companhia, alt. 300 m, September 20, 1958, Reitz & Klein 7202 (US, type; HBR).

Curitiba: Border of thicket, Ponte Alta do Sul, alt. 900 m, October 24, 1962, Reitz & Klein 13357 (HBR, US).

Pôrto União: Campo, Matos Costa, alt. 1100 m, October 27, 1962, Reitz & Klein 13739 (HBR, US).

Santa Cecília: Crest of Serra do Espigão, near Campos do Areão, alt. 1200 m, October 21, 1961, Pabst 6112 & Pereira 6285 (HB, US). Bog, Campo Alto, alt. 1200 m, October 25, 1962, Reitz & Klein 13492 (HBR, US).

São José: Thicket, Serra da Boa Vista, alt. 800 m, October 14, 1960, Reitz & Klein 10204 (HBR, US).

SOLANUM (Anthoresis) COMPRESSUM, sp. nov.

E pilis dendriticis S. verbascifolio L. proximum sed ramis juvenilibus compressis, foliis multo minoribus concoloribus, inflorescentiis simplicibus differt.

ARBOR parva, ad 4 m alta; ramis juvenilibus compressis, acute angulatis, pilis dendriticis vestitis; cortice persistente, atro, subfulgente; FOLIIS solitariis, 10 mm petiolatis, lanceolatis, basi apiceque attenuatis, 12 cm longis, 3.5 cm latis, concoloribus, adultis subtus in nervorum majorum axillis pubescentibus, alibi glabris; INFLORESCENTIIS mox lateralibus et oppositifoliis, ramosis, laxe corymbosis; pedunculo 2 cm longo, valde compresso; PEDICELLIS gracilibus, 12-25 mm longis, paulo supra basin articulatis; CALYCE hemisphaerico, 3 mm alto, curto-lobato, lobis rotundatis breviter cuspidatisque; COROLLA alba, 20 mm diametro, ultra 2/3 divisa, lobis lanceolatis, acutis; STAMINIBUS aequali-

bus; filamentis 0.5 mm longis, parum connatis; antheris oblongis, 4 mm longis, dorso papillois; STYLO stamina superante, glabro; STIGMATE clavata, bilobata; BACCA globosa, 17 mm diametro. Pl. III, fig. 5: Branch x 1/2; fig. 6: Young flower x 1; fig. 7: Adult flower x 1; fig. 8: Stamens x 2.

BRAZIL: Santa Catarina: São Joaquim: Araucaria forest, Fazenda da Laranja, Bom Jardim, alt. 1400 m, December 13, 1958, Reitz & Klein 7867 (US, type; HBR). Urupema, alt. 1200 m, December 24, 1962, Reitz & Klein 14584 (HBR, US). Riverbank forest, Rio Lavatudo, alt. 1000 m, July 15, 1963, Reitz & Klein 15947 (HBR, US).

SOLANUM (Anthoresis) XIPHOCEPHALUM, sp. nov.

S. verbascifolium L. simulans sed pilis vere stellatis, foliis supra sparse vestitis differt.

PLANTA fruticosa, 3 m alta, partibus juvenilibus pilis stipitato-stellatis aureis omnino vestitis; FOLIIS solitariis, 3 cm petiolatis, ellipticis, apice attenuatis, basi late acutis, 20 cm longis, 8 cm latis, submembranaceis, bicoloratis, supra sparse stellatis et cum nervis impressis, infra dense stellatis; INFLORESCENTIIS terminalibus, corymbosis, 5 cm diametro; pedunculo 4 cm longo; PEDICELLIS 4 mm longis; CALYCE 6 mm alto, dense stellato, ca. 1/2 diviso, lobis late subtriangularibus; COROLLA 20 mm diametro, alba, extus dense stellata, lobis oblongis, acutis, 7 mm longis; STAMINIBUS subaequalibus; filamentis brevibus; antheris oblongis, 4 mm longis; STYLO gracili, glabro, stamina bene superante; BACCA ignota. Pl. III, fig. 9: Branch x 1/2; fig. 10: Trichome x 5; fig. 11: Flower x 1; fig. 12: Stamen x 2.

BRAZIL: Santa Catarina: Blumenau: Forest, Morro Spitzkopf, alt. 750 m, September 18, 1959, Reitz & Klein 9138 (US, type; HBR).

SOLANUM (Cyphomandropsis) FUSIFORME, sp. nov.

In sectione, planta omnino glabra, pedunculo elongato, bacca anguste fusiforme satis distincta.

PLANTA fruticosa, omnino glabra; ramorum cortice pallide viridi, sublaeve; FOLIIS solitariis, 30 mm petiolatis, lanceolatis, acuminatis, basi inaequaliter rotundatis, 9 cm longis, 35 mm latis, plerumque simplicibus sed raro basi foliolis binis reductis praeditis; INFLORESCENTIIS axillaribus vel subaxillaribus, simplicibus, laxis, paucifloris; rhachi geniculata; pedunculo gracili, 3-5 cm longo; PEDICELLIS secundis, gracillimis, 14 mm longis; CALYCE patelliforme, 7 mm diametro, crenulato; COROLLA 22 mm diametro, purpurea, profunde divisa, lobis lanceolatis, acutis; STAMINIBUS aequalibus; antheris subsessilibus, anguste ovoideis, ad apicem versus attenuatis et poris minutis praeditis; BACCA anguste fusiforme, 30 mm longa, 6 mm diametro. Pl. III, fig. 13: Leaf x 1/2; fig. 14: Inflorescence x 1/2; fig. 15: Calyx x 1; fig. 16: Flower x 1; fig. 17: Stamen x 2.

BRAZIL: Santa Catarina: Dionísio Cerqueira: Araucaria forest and ruderal, near Dionísio Cerqueira, alt. 800-850 m, December 30, 1956, Smith & Reitz 9658 (US, type; HBR).

SOLANUM (Cyphomandropsis) SUBHASTATUM, sp. nov.

*S. johannae* Bitter proximum sed foliis elongatis supra glabris nonnunquam basi lobatis differt.

PLANTA herbacea; ramis ultimis ascendentibus, gracilibus, minute stellatis; FOLIIS solitariis, 20 mm petiolatis, lanceolatis vel anguste lanceolatis, basi apiceque attenuatis, 10-13 cm longis et 15-23 mm latis cum majoribus angustis, simplicibus vel nonnunquam basi bilobatis, subtus et nervo centrali supra e pilis simplicibus vel dendriticis sparse minuteque vestitis; INFLORESCENTIIS axillaribus, simplicibus, laxis, paucifloris; pedunculo gracillimo, 3 cm longo; PEDICELLIS secundis, 12 mm longis, gracillimis, minute pubescentibus; CALYCE hemisphaerico, 4 mm alto, sparse pubescente, 1/2 lobato, lobis anguste triangularibus; COROLLA 20 mm diametro, purpurea, ultra 2/3 divisa, lobis anguste triangularibus; STAMINIBUS aequalibus; filamentis 1.5 mm longis; antheris anguste ovoideis, ad apicem versus attenuatis, 6 mm longis; STYLO stamina vix superante; BACCA ignota. Pl. IV, fig. 1: Lobed leaf x 1/2; fig. 2: Leaf and inflorescence x 1/2; fig. 3: Calyx x 1; fig. 4: Corolla x 1; fig. 5: Stamen x 2.

BRAZIL: Santa Catarina: Lauro Müller - Urussanga: Araucaria forest, Pinhal da Companhia, alt. 300 m, August 23, 1958, Reitz & Klein 7053 (US, type; HBR).

SOLANUM (Simplicipilum) MATADORI, sp. nov.

In sectione, planta inerme floribus exceptis glabra, foliis haud lobatis, inflorescentiis ramosis satis distincta.

PLANTA fruticosa, 2 m alta, inermis, floribus exceptis glabra; ramis teretibus, subrectis; cortice persistente, laeve, pallidoviride; FOLIIS solitariis sed nonnunquam densis, 15 mm petiolatis, anguste lanceolatis, basi apiceque attenuatis, 16 cm longis, 25 mm latis, subcarnosis; INFLORESCENTIIS extra-axillaribus, laxe corymbosis, multifloris; pedunculo 2-6 cm longo, tereti; PEDICELLIS gracillimis, 10-25 mm longis; CALYCE hemisphaerico, crenato vel breviter lobato, lobis plus minusve triangulari-cuspidatis, minute ciliatis; COROLLA 24 mm diametro, purpurea, minute pubescente, profunde divisa, lobis lanceolatis, acutis; STAMINIBUS aequalibus; filamentis latis, brevissimis; antheris anguste ovoideis, ad apicem versus attenuatis; BACCA ignota. Pl. IV, fig. 6: Leaf and inflorescence x 1/2; fig. 7: Calyx x 1; fig. 8: Flower x 1; fig. 9: Stamen x 2.

BRAZIL: Santa Catarina: Rio do Sul: Araucaria forest, Alto Matador, alt. 800 m, October 16, 1958, Reitz & Klein 7254 (US, type; HBR).

Santa Cecilia: Crest of the Serra do Espigão, near Vale Campos do Areão, alt. 1200 m, October 20, 1961, Pabst 6086 & Pereira 6259 (HB, US).

SOLANUM (Torvaria) BISTELLATUM, sp. nov.

*S. palinacantho* Dunal proximum sed foliis profunde lobatis, calycis lobis anguste triangularibus differt.

PLANTA herbacea vel fruticosa, 1-3 m alta, plus minusve minute glandulosa et setoso-tomentosa; caulibus spinis rectis citrinis

glanduloso-pubescentibus armatis; FOLIIS binis inaequalibus, 10 cm petiolatis, late ovatis, basi subtruncatis vel late subcordatis, ad 27 cm longis, profunde 7-9-lobatis, lobis angustis, attenuatis, grosse dentatis, in petiolo et nervis majoribus spinosis, utrinque dense minuteque pallido-stellatis, parum bicoloratis; INFLORESCENTIIS extra-axillaribus, ramosis, multifloris; pedunculo per anthesin 15-40 mm longo, spinoso; PEDICELLIS secundis, gracilibus, per anthesin 9-14 mm longis, dense spinosis stipitato-glandulosisque; CALYCE 5-6 mm de altura, spinis gracillimis et glandulis stipitatis dense vestito, profunde diviso, lobis anguste triangularibus; COROLLA viride lavis vel flavescens-alba, 25 mm diametro, profunde diviso, lobis lanceolatis, acutis; STAMINIBUS aequalibus; filamentis 2 mm longis; antheris ovoideis cum apice longo-attenuato, basi sagittatis, 6 mm longis; BACCA ignota. Pl. V, fig. 1: Branch section x 1/2; fig. 2: Spine x 2; fig. 3: Trichome x 25; fig. 4: Flower x 1; fig. 5: Stamen x 2.

BRAZIL: Santa Catarina: Caçador: Araucaria woods, 3 km west of Caçador, alt. 900-1000 m, February 6, 1957, Smith & Klein 10881 (US, type; HBR, R).

Campo Alegre: Slopes of Morro Iquererim above tree line, alt. 1500 m, December 10, 1956, Smith & Klein 8556 (HBR, R, US).

Curitibanos: Campo, Ponte Alta do Sul, alt. 950 m, January 2, 1962, Reitz & Klein 11310-a (HBR, US).

Joinville: Thicket, Estrada Dona Francisca, alt. 600 m, November 6, 1957, Reitz & Klein 5587 (HBR, US).

Luis Alves: Woods, Braço Joaquim, alt. 300 m, January 7, 1956, Reitz & Klein 2332 (HBR).

Pôrto União: Ruderal, by the road to Matos Costa, 25 km south of Pôrto União, alt. 750-800 m, December 20, 1956, Smith & Reitz 8903 (HBR, R, US).

Rio do Sul: Thicket, Serra do Matador, alt. 400 m, December 30, 1958, Reitz 6119 (HBR, US).

SOLANUM (Torvaria) BRUSQUENSE, sp. nov.

S. palinacantho Dunal proximum sed calycis glandulis sessilibus, corolla alba, bacca valde minore differt.

PLANTA herbacea vel fruticosa, 1-2 m alta; caulibus spinis rectis brevibus latis glabris armatis; FOLIIS solitariis vel binis, 4-7 cm petiolatis, late ovatis, basi subcordatis, 18 cm longis, 7-lobatis, lobis late triangularibus, brevibus, acutis, in petiolo et nervis majoribus spinosis, utrinque dense minuteque pallido-stellatis, parum bicoloratis; INFLORESCENTIIS extra-axillaribus, simplicibus vel ramosis, multifloris; pedunculo per anthesin 15-20 mm longo, fructifero 45 mm; PEDICELLIS secundis, gracilibus, per anthesin 10 mm longis, fructiferis 20 mm longis, spinosis; CALYCE 11 mm alto, spinis et glandulis minutis sessilibus vestito, profunde diviso, lobis anguste triangularibus; COROLLA calycem paulo superante, alba, profunde divisa; ANTHERIS graciliter conicis; BACCA subglobosa, 12 mm diametro, alba, viride reticulata. Pl. VI, fig. 1: Branch section x 1/2; fig. 2: Trichome x 25; fig. 3: Calyx x 1; fig. 4: Stamen x 2; fig. 5: Fruit x 1/2.

BRAZIL: Santa Catarina: Brusque: Edge of woods, Mato de Malucher, alt. 40-50 m, February 23, 1952, L. B. Smith 5762 (US, type).

Itajaí: Woods, Morro da Fazenda, alt. 300 m, February 10, 1955, Klein 1163 (HBR).

Turvo - Araranguá: Abandoned clearing, alt. 30 m, November 24, 1943, Reitz C-227 (HBR).

CYPHOMANDRA MACROPHYLLA, sp. nov.

C. corymbiflora Sendtn. proxima sed foliis duplo majoribus apice haud rotundatis sed triangularibus, antherarum connectivo lateraliter extenso differt.

PLANTA herbacea, magna; axibus pilis patentibus dimorphis vestitis, pilis aliis simplicibus brevibus atro-glandulosis, aliis cellulis pluribus praeditis 3 mm longis eglandulosis; FOLIIS solitariis, ad 16 cm petiolatis, uniformibus, late ovatis, basi profunde cordatis, apice triangularibus et breviter acuminatis, 33 cm longis, 25 cm latis, membranaceis, subconcoloribus, utrinque pilis minutis pallidis sparse vestitis; INFLORESCENTIIS axillaribus, corymbosis, 9 cm diametro; pedunculo erecto, 5 cm longo; PEDICELLIS gracilibus, 10 mm longis, paulo supra basin articulatis; CALYCE 2 mm alto, profunde diviso, lobis anguste triangularibus, acutis; COROLLA rubro-purpurea, 10 mm diametro, profunde divisa, lobis lanceolatis, acutis; ANTHERIS oblongis, apice abrupte contractis, 3 mm longis, connectivo lateraliter extenso; STYLO graciliter cylindrico; BACCA fusiforme, dense pubescente. Pl. VII, fig. 1: Leaf x 1/2; fig. 2: Inflorescence x 1/2; fig. 3: Stem trichome x 25; fig. 4: Inflorescence trichomes x 25; fig. 5: Flower x 1; fig. 6: Stamens x 2.

BRAZIL: Santa Catarina: Lauro Müller - Urussanga: Araucaria forest, Pinhal da Companhia, alt. 300 m, August 23, 1958, Reitz & Klein 7044 (US, type; HBR). Lauro Müller: Novo Horizonte, alt. 400 m, October 24, 1958, Reitz & Klein 7517 (HBR, US).

CYPHOMANDRA MORTONIANA, sp. nov.

C. calycina Sendtn. proxima sed corolla pulcherrima calyce subduplo superante differt.

PLANTA fruticosa, 1-3 m alta, pilis brevibus uniformibus fere omnino vestita; ramis ultimis subherbaceis; FOLIIS solitariis vel binis, longo-petiolatis, uniformibus, late cordato-ovatis, abrupte acuminatis, 15-24 cm longis, 8-12 cm latis, integris, membranaceis, utrinque minute denseque pubescentibus, infra pallidioribus; INFLORESCENTIIS axillaribus, ramosis, corymbosis, multifloris; pedunculo plerumque erecto, 7-13 cm longo; PEDICELLIS 15-25 mm longis, prope basin articulatis; CALYCE 5-9 mm alto, corolla multo superato, dense glanduloso-pubescente, ad medium lobato, lobis late ovatis, apiculatis; COROLLA 30-50 mm diametro, fulgente purpurea, 2/3-3/4 lobata, lobis ellipticis, acutis; STAMINIBUS rectis, 7 mm longis, connectivo basi valde incrassato; OVARIO pallido-pubescente; stylo graciliter cylindrico. Pl. VIII, fig. 1: Branch section x 1/2; fig. 2: Trichome (large) x 25; fig. 3: Calyx x 1; fig. 4: Corolla x 1; fig. 5: Stamens x 2; fig. 6:

Pistil x 2.

CYPHOMANDRA PATRUM, sp. nov.

C. mortoniana Smith & Downs proxima sed axibus juvenilibus petiolisque e pilis multicellularibus patentibusque densissime vestitis differt.

PLANTA herbacea magna, pilis dimorfis fere omnino dense vestita, pilis aliis simplicibus brevibus glandularibusque, aliis multicellularibus ultra 2 mm longis eglandularibusque: FOLIIS solitariis, longe petiolatis, uniformibus, late cordato-ovatis, acuminatis, 11-17 cm longis, 6-11 cm latis, integris, membranaceis, infra paulo pallidioribus; INFLORESCENTIIS terminalibus, ramosis, corymbosis, subdense multifloris; pedunculo erecto, 10 cm longo; PEDICELLIS per anthesin 20 mm longis, fructiferis 30 mm, prope basin articulatis; CALYCE 9 mm alto, profunde lobato, lobis elliptico-oblongis, acutis; COROLLA 40 mm diametro, purpurea, 3/4 lobata, lobis subellipticis, acutis; STAMINIBUS rectis, 6 mm longis, connectivo basi incrassato; STYLO graciliter cylindrico.

Pl. IX, fig. 1: Section of stem x 2.

BRAZIL: Santa Catarina: Bom Retiro: In campo, Campo dos Padres alt. 2000 m, December 15, 1948, Reitz 2364 (US, type: HBR).

CYPHOMANDRA KLEINII, sp. nov.

C. mortoniana Smith & Downs proxima sed axibus omnibus pilis dimorphis dense vestitis, calycis lobis angustis, corolla minore differt.

PLANTA herbacea magna, axibus omnibus e pilis dimorphis dense vestitis, pilis aliis simplicibus brevibus atro-glandulosis, aliis multicellularibus 5 mm longis eglandulosisque; FOLIIS solitariis vel binis, longe petiolatis, uniformibus, late cordato-ovatis, acuminatis, 21 cm longis, 13 cm latis, membranaceis, supra subglabris, subtus breviter pubescentibus glandulosisque; INFLORESCENTIIS terminalibus axillaribusque, laxe ramosis, multifloris; pedunculo plerumque erecto, 2-7 cm longo; PEDICELLIS florigeris 13 mm longis, gracilibus, fere ad basin articulatis; CALYCE 4-5 mm alto, profunde lobato, lobis anguste triangularibus vel sublinearibus, acutis; COROLLA 18-30 mm diametro, purpurea, ca. 3/4 lobata, lobis oblongo-ellipticis, acutis; STAMINIBUS rectis, 3.5-5 mm longis, connectivo basi incrassato; OVARIO pubescente; stylo graciliter cylindrico; BACCA ellipsoidea, dense pubescente.

Pl. IX, fig. 2: Leaf x 1/2; fig. 3: Inflorescence x 1/2; fig. 4: Young flower x 1; fig. 5: Adult flower x 1; fig. 6: Stamen x 2.

BRAZIL: Santa Catarina: Curitibanos: Thicket, Ponte Alta do Sul, alt. 900 m, April 19, 1962, Reitz & Klein 12576 (US, type: HBR).

Abelardo Luz: Ruderal, 13 km south of Abelardo Luz, alt. 500-600 m, February 19, 1957, Smith & Klein 11513 (HBR, R, US).

Caçador: Araucaria forest, 20 km northeast of Caçador, alt. 950-1100 m, December 22, 1956, Smith & Reitz 9044 (HBR, R, US).

Canoinhas: Araucaria forest, Rio dos Poços, alt. 750 m, October 26, 1962, Reitz & Klein 13593 (HBR, US).

Curitibanos: Border of woods, alt. 850 m, September 8, 1957,

Reitz & Klein 4903 (HBR, US). Araucaria forest, alt. 900 m, October 30, 1962, Reitz & Klein 13912 (HBR, US).

Lajes: Araucaria forest, Morro do Pinheiro Sêco, alt. 950 m, December 18, 1962, Reitz & Klein 14101 (HBR, US).

Lebon Regis: Woods road, Rio dos Patos, alt. 900 m, April 23, 1962, Reitz & Klein 12873 (HBR, US).

Papanduva: Araucaria forest, Picada, km 181 of the Estrada de Rodagem Federal, alt. 750 m, October 25, 1962, Reitz & Klein 13533 (HBR, US).

Santa Cecilia: Araucaria forest, alt. 1000 m, December 18, 1962, Reitz & Klein 14138 (HBR, US).

*CYPHOMANDRA MARITIMA*, sp. nov.

Ab omnibus speciebus brasiliensibus foliis basi subcordatis subtus stellato-pubescentibus, inflorescentiis simplicibus differt.

PLANTA fruticosa, humilis, partibus juvenilibus stellato-pubescentibus; cortice cinereo, rugoso; FOLIIS solitariis, 15 mm petiolatis, plerumque simplicibus sed raro basi foliolo unico valde reducto praeditis, ovatis vel ellipticis, late subacutis, basi plus minusve cordatis, nonnunquam parum obliquis, 6.5 cm longis, 4 cm latis, valde bicoloratis, praecipue subtus stellato-pubescentibus; INFLORESCENTIIS axillaribus, simplicibus, submultifloris; pedunculo 15-20 mm longo, gracili, fructifero decurvato; PEDICELLIS 12 mm longis, gracilibus; CALYCE 3 mm alto, ca. 2/3 lobato, lobis ovatis; COROLLA et STAMINIBUS ignotis; BACCA late ovoidea, 15 mm longa, minute stellato-pubescente. Pl. IX, fig 7: Branch section x 1/2.

BRAZIL: Santa Catarina: Pôrto Belo: Strand, Bombas, alt. 1-5 m, March 31, 1957, Smith, Reitz & Klein 12322 (US, type; HBR, R).

Note: Without stamens it can not be certain that the above species is a Cyphomandra and not a Solanum. However, a decision must be made for floristic use and we feel that the probabilities favor the present position.

*CYPHOMANDRA PINETORUM*, sp. nov.

C. divaricata (Mart.) Sendtn. proxima sed foliis fere uniformibus basi plus minusve cordatis, pedunculo multo brevior, inflorescentia pauciflora, corolla minore, lobis lanceolatis differt.

PLANTA herbacea vel suffruticosa, partibus juvenilibus pilis dimorphis vestitis, pilis aliis longis, acutis, multicellularibus, aliis brevibus glandulosisque; cortice cinereo, parum rugoso; FOLIIS solitariis vel binis inaequalibusque, 25 mm petiolatis, subuniformibus, anguste ovatis, acuminatis, basi rotundatis vel paulo cordatis, 7 cm longis, 2.5 (-4) cm latis, utrinque pubescentibus praecipue infra; INFLORESCENTIIS axillaribus, simplicibus, paucifloris; pedunculo mox decurvato, 15 mm longo; PEDICELLIS gracillimis, 15 mm longis, paulo supra basin articulatis; CALYCE 3-4 mm alto, ca. 3/4 lobato, lobis anguste triangularibus; COROLLA 10-15 mm alta, profunde divisa, lobis lanceolatis; STAMINIBUS rectis, connectivo ad basin versus gradatim incrassato;

OVARIO ovoideo, glabro; stylo graciliter cylindrico; BACCA ignota. Pl. IX, fig. 8: Branch section x 1/2; fig. 9: Flower x 1; fig. 10: Stamens x 2.

BRAZIL: Santa Catarina: Campo Alegre: Campo and araucaria forest, 4 km south of Campo Alegre on the road to Jaraguá do Sul, alt. 900-1000 m, November 6, 1956, Smith & Klein 7339 (US, type; HBR).

Rio do Sul: Araucaria forest, Alto Matador, alt. 800 m, January 26, 1959, Reitz & Klein 8317 (HBR, US).

São José: Woods road, Serra da Boa Vista, alt. 900 m, January 25, 1961, Reitz & Klein 10743 (HBR, US).

CYPHOMANDRA REITZII, sp. nov.

C. diploconos (Mart.) Sendtn. proxima sed ovario baccaque dense pubescentibus differt.

PLANTA suffruticosa, ramosa, partibus juvenilibus pilis dimorphis vestitis, pilis aliis acutis, aliis atro-glandulosis; FOLIIS solitariis, 10-15 mm petiolatis, simplicibus, ellipticis vel late ovatis, acuminatis, basi late rotundatis et paulo cordatis, 5-9 cm longis, 25-40 mm latis, tenue coriaceis, parum bicoloratis, minute pubescentibus praecipue infra in nervis; INFLORESCENTIIS axillaribus vel subaxillaribus, simplicibus, 10-20-floris; pedunculo decurvato, 2 cm longo; PEDICELLIS 15 mm longis; CALYCE 3 mm alto, ca. 2/3 diviso, lobis ovatis, obtusis; COROLLA (juvenile) 8 mm alta; STAMINIBUS rectis; connectivo basi incrassato; OVARIO dense pubescente; stylo late obconico; BACCA ellipsoidea, acuta, juvenile 20 mm longa, dense pubescente. Pl. X, fig. 1: Branch section x 1/2; fig. 2: Flower x 1; fig. 3: Stamens x 2; fig. 4: Pistil x 2.

BRAZIL: Santa Catarina: Abelardo Luz: Ruderal, 17 km north of Abelardo Luz, alt. 500-600 m, December 25, 1956, Smith & Reitz 9216 (US, type; HBR, R).

CYPHOMANDRA HISPIDA, sp. nov.

C. oxyphylla Dunal proxima sed foliis basi plus minusve cordatis, floribus valde minoribus differt.

PLANTA fruticosa, partibus juvenilibus pilis patentibus dimorphis dense vestitis, pilis aliis longis multicellularibus acutisque, aliis brevibus glandulosisque; ramis ultimis subherbaceis; FOLIIS 20 mm petiolatis, solitariis vel binis alio angusto alio lato, acuminatis, basi plus minusve cordatis vel raro lobatis, 3-9 cm longis, 2-4 cm latis, submembranaceis, plus minusve bicoloratis, utrinque pubescentibus sed praecipue in nervis; INFLORESCENTIIS axillaribus, simplicibus, plerumque 1-3-floris; pedunculo gracillimo, 15 mm longo, mox decurvato; PEDICELLIS 6-12 mm longis CALYCE 2-3 mm alto, ca. 2/3 lobato, lobis ovatis, acutis; COROLLA purpurea, 16 mm diametro, profunde diviso, lobis rectis, lanceolatis, acutis; STAMINIBUS rectis, connectivo basi incrassato; OVARIO pubescente; stylo graciliter cylindrico. Pl. X, fig. 5: Branch section x 1/2; fig. 6: Young flower x 1; fig. 7: Stamens x 2.

BRAZIL: Santa Catarina: Vidal Ramos: Forest, Sabiá, alt. 750



m, December 31, 1957, Reitz & Klein 5982 (US, type; HBR).

Bom Retiro: Thicket, Riosinho, alt. 1100 m, December 15, 1948, Reitz 2363 (HBR, US). Forest, Figueiredo, alt. 1000 m, December 28, 1948, Reitz 2870 (HBR, US).

Pôrto União: Araucaria forest, Carazinho, alt. 1100 m, January 7, 1962, Reitz & Klein 11710 (HBR, US).

CYPHOMANDRA ANGUSTIFOLIA, sp. nov.

C. hispida Smith & Downs proxima sed pilis multicellularibus raris, foliis angustioribus differt.

PLANTA suffruticosa, ramosissima, partibus juvenilibus pilis dimorphis vestitis, pilis aliis raris multicellularibus acutisque, aliis densis atro-glandulosisque; FOLIIS 8-22 mm petiolatis, solitariis vel binis cum majoribus angustis, simplicibus, anguste ovatis, acuminatis, basi subcordatis, 4-7 cm longis, 15-20 mm latis, membranaceis, plus minusve bicoloratis, minute pallido-pubescentibus praecipue infra; INFLORESCENTIIS axillaribus vel paulo altioribus, simplicibus, 4-8-floris; pedunculo 10-20 mm longo; PEDICELLIS gracillimis, 10-15 mm longis; CALYCE 2-3 mm alto, ca. 2/3 diviso, lobis ovatis, subacutis; COROLLA purpurea, 20 mm diametro, profunde diviso, lobis anguste lanceolatis, acutis; STAMINIBUS rectis, connectivo basi incrassato; OVARIO dense pubescente. Pl. X, fig. 8: Branch section x 1/2; fig. 9: Calyx x 1; fig. 10: Stamens x 2.

BRAZIL: Santa Catarina: Pôrto União: Ruderal near Pôrto União on the road to Santa Rosa, alt. 750-800 m, December 18, 1956, Smith & Reitz 8736 (US, type; HBR, R).

Papanduva: Araucaria forest, km 136 on the Estrada de Rodagem Federal north of Papanduva, alt. 800 m, December 7, 1956, Smith & Klein 8416 (HBR, US).

Santa Cecilia: Forest, Campo do Areão, alt. 1100 m, January 3, 1962, Reitz & Klein 11391 (HBR, US).

NICOTIANA AZAMBUJAE, sp. nov.

N. bonariense Lehmann proxima sed floribus minoribus, calycis lobis quam tubo subduplo majoribus, calyce tubo corollae subaequante, corolla rubro-purpurea differt.

PLANTA herbacea, plus minusve viscida; ramis elongatis, subrectis, gracilibus; FOLIIS basalibus ignotis, caulinis sessilibus, oblanceolatis, late acutis, aliquid auriculatis, haud decurrentibus, ad 18 cm longis et 6 cm latis; INFLORESCENTIIS racemiformibus, laxis, ad 36 cm longis; PEDICELLIS gracillimis, per anthesin ad 4 mm longis et fructiferis 6 mm; CALYCE anguste campanulato, 7 mm alto, profunde lobato, lobis linearibus, attenuatis, quam tubo subduplo majoribus; COROLLA rubro-purpurea, tubo anguste obconico, 9 mm longo, apice inflato, limbo 10 mm lato, lobis late ovatis, rotundatis; staminibus inaequalibus, inclusis. Pl. XI, fig. 1: Leaf x 1; fig. 2: Flower x 1; fig. 3: Stamen x 2; fig. 4: Fruit x 1.

BRAZIL: Santa Catarina: Brusque: In thicket, Azambuja, alt. 50 m, November 1, 1948, Reitz 2245 (US, type; HBR).

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## PETUNIA REITZII, sp. nov.

P. inflata R. E. Fries proxima sed foliis angustis, corollae tubo majore amplioreque differt.

PLANTA herbacea, ramosa, patente, viscido-pilosa; caulibus prostratis vel adscendentibus, flexuosis vel geniculatis; FOLIIS subsessilibus, patentibus, anguste lanceolatis, basi apiceque attenuatis, 25-40 mm longis, 7 mm latis, membranaceis; PEDICELLIS ad 28 mm longis, fructiferis patentibus, haud reflexis; CALYCE viscido-piloso, tubo 2 mm alto, lobis inaequalibus, angustissime linearibus, 15 mm longis, ca. 0.7 mm latis; COROLLA rubro-purpurea, 45 mm longa, tubo anguste infundibuliforme, lobis deltoideis, rotundatis; STAMINIBUS profunde inclusis; CAPSULA anguste ellipsoidea, acuta, 7 mm longa. Pl. XI, fig. 5: Leaf x 1/2; fig. 6: Flower x 1.

BRAZIL: Santa Catarina: Bom Retiro: In campo, Riosinho, alt. 1000 m, December 24, 1948, Reitz 2760 (US, type; HBR).

## PETUNIA SAXICOLA, sp. nov.

P. occidentale R. E. Fries proxima sed caulibus foliisque subglabris, corolla subduplo majore, tubo angustiore differt.

PLANTA herbacea; caulibus erectis vel decumbentibus cum ramis erectis, sparse minuteque pubescentibus; FOLIIS 1 cm petiolatis, ellipticis, basi parum attenuatis, apice subacutis, 35 mm longis, 17 mm latis, submembranaceis, subglabris; PEDICELLIS flexuosis, 5 cm longis, post anthesin haud decurvatis; CALYCE 15 mm alto, fere ad basin diviso, lobis linearibus, apice rotundatis et paulo dilatatis; COROLLA rubra, tubo anguste obconico, 45 mm alto, 12 mm diametro, lobis late rotundatis, 10 mm longis; STAMINIBUS breviter inclusis; STIGMATE semiglobosa; CAPSULA ignota. Pl. XI, fig. 7: Flower x 1; fig. 8: Stigma x 2.

BRAZIL: Santa Catarina: Lajes: On rock, Alto da Serra, Encruzilhada, alt. 900 m, October 30, 1962, Reitz & Klein 13931 (US, type; HBR).

## PETUNIA SCHEIDEANA, sp. nov.

P. inflata R. E. Fries proxima sed caulibus foliisque subglabris, corollae tubo majore amplioreque differt.

PLANTA herbacea; caulibus pluris e radice centrali divergentibus, erectis vel repentibus, simplicibus vel ramosis, gracillimis, ad 7 dm longis, basi sparse pallido-pubescentibus, dein glabris; FOLIIS 1 cm petiolatis, ovatis vel lanceolatis, basi apiceque attenuatis, 45 mm longis, 20 mm latis, membranaceis, marginibus petiolisque ciliatis exceptis glabris; PEDICELLIS 11 cm longis, post anthesin haud reflexis; CALYCE 10-17 mm alto, fere ad basin diviso, lobis linearibus, apice rotundatis et paulo dilatatis; COROLLA rubro-purpurea, intus stella centrali alba praedita, tubo late obconico, 20 mm alto et subaequaliter lato, lobis obovatis, late rotundatis, 25 mm longis; STAMINIBUS 18 mm longis; STIGMATE breviter bifurcata, apice rotundata; CAPSULA ignota. Pl. XI, fig. 9: Leaf x 1/2; fig. 10: Flower x 1.

BRAZIL: Santa Catarina: Campo Alegre: Border of woods, upper farm of Ernesto Scheide, alt. 900-1100 m, November 9, 1956, Smith

& Klein 7522 (US, type; HBR, R).

PETUNIA SERRULATA, sp. nov.

P. paranense Dusén et P. rupestre Dusén proxima sed foliis calycis lobisque serrulatis differt.

PLANTA suffruticosa, humilis, ramosa; ramis erectis repentibusque, apice dense foliosis; FOLIIS linearibus, basi apiceque attenuatis, 22 mm longis, 2 mm latis, crassis, glabris, margine incurvatis et dentibus minutis triangularibus albido-setosis laxae armatis; PEDICELLIS gracillimis, 10-20 mm longis, glabris; CALYCE plusquam medio diviso, sulcato, minute sparseque pubescente vel glabro, tubo anguste obconico, 4 mm alto, lobis linearibus, attenuatis, paulo inaequalibus, per anthesin ad 10 mm longis, serrulatis; COROLLA rubra vel rubro-purpurea, extus minute pubescente, tubo basi anguste cylindrico et 8 mm longo, apice anguste campanulato et 12 mm longo, lobis subtruncatis apiculatis que, 8 mm longis; STAMINIBUS profunde inclusis; STIGMATE globosa. Pl. XI, fig. 11: Branch section x 1/2; fig. 12: Leaf x 2; fig. 13: Flower x 1; fig. 14: Fruit x 2.

BRAZIL: Santa Catarina: São Joaquim: Mountain crest, Bom Jardim, alt. 1400 m, October 23, 1958, Reitz & Klein 7446 (US, type; HBR).

PETUNIA SPATHULATA, sp. nov.

P. selloviana Sendtn. proxima sed foliis rectis spathulatis latioribus apice late rotundatis differt.

PLANTA suffruticosa, ramosa, prostrata, pilis brevibus rigidis glandulosis vestita; FOLIIS subdensis, rectis, dimorphis cum parvis in axillis magnarum fasciculatis, spathulatis, apice late rotundatis, basi longe attenuatis, majoribus 19 mm longis et 5 mm latis, tenuibus, ex sicco atris et supra anguste canaliculatis, alibi planis; PEDICELLIS per anthesin 8 mm longis, fructiferis patentibus vel reflexis et valde amplificatis; CALYCE obconico, tubo 3-3.5 mm alto, lobis inaequalibus, anguste triangularibus, obtusis, 4-6 mm longis; COROLLA anguste infundibuliforme, rubro-purpurea, 16-20 mm longa, lobis late rotundatis; STAMINIBUS 3 mm ad corollae tubum adnatis; STIGMATE disciforme-capitata. Pl. XII, fig. 1: Leaf x 1/2; fig. 2: Flower x 1.

BRAZIL: Santa Catarina: Pôrto União: Waste ground, by the road to Matos Costa, 35 km south of Pôrto União, alt. 1200 m, December 20, 1956, Smith & Reitz 8907 (US, type; HBR).

PETUNIA ALPICOLA, sp. nov.

P. linoïdes Sendtn. proxima sed foliis dimorphis densis elongatis differt.

PLANTA herbacea vel suffruticosa, humilis, ramosa, subglabra vel pilis brevibus rigidis glandulosis dense vestita; caulibus erectis; FOLIIS dimorphis, fasciculatis, densis, patentibus, breviter petiolatis, anguste oblanceolatis, obtusis, basi attenuatis, majoribus 30 mm longis et 4 mm latis, planis; PEDICELLIS 8-11 mm longis, fructiferis patentibus vel reflexis; CALYCEIS tubo obconico, 3-4 mm alto, lobis inaequalibus, anguste triangularibus

obtusis, 5-8 mm longis; COROLLA infundibuliforme, 18-20 mm longa, rubro-purpurea, lobis late rotundatis; STAMINIBUS 3 mm ad corollae tubum adnatis; STIGMATE parva, disciforme. Pl. XII, fig. 3: Leaf x 1/2; fig. 4: Flower x 1.

BRAZIL: Santa Catarina: Bom Retiro: In campo, Campo dos Padres, alt. 1800 m, November 20, 1948, Reitz 2627 (US, type; HBR).

PETUNIA KLEINII, sp. nov.

P. linoides Sendtn. proxima sed foliis dimorphis subdensis elongatis, floribus minoribus differt.

PLANTA subherbacea, humilis, ramosa, pilis minutis glandularibus dense vestita; caulibus erectis; FOLIIS dimorphis, fasciculatis, subdensis, patentibus, anguste lanceolatis, apice rotundatis, basi attenuatis, breviter petiolatis, majoribus 25 mm longis et 5 mm latis, planis; PEDICELLIS gracillimis, 10 mm longis, fructiferis reflexis; CALYCIS tubo obconico, 3 mm alto, lobis inaequalibus, anguste triangularibus, obtusis, 4 mm longis; COROLLA infundibuliforme, 14 mm longa, rubro-purpurea, lobis late rotundatis; STAMINIBUS 2 mm ad corollae tubum adnatis; STIGMATE parva, disciforme. Pl. XII, fig. 5: Flower x 1; fig. 6: Style x 2.

BRAZIL: Santa Catarina: Mafra: Border of gallery forest, Campo Novo, alt. 750 m, December 11, 1962, Klein 3822 (US, type; HBR).

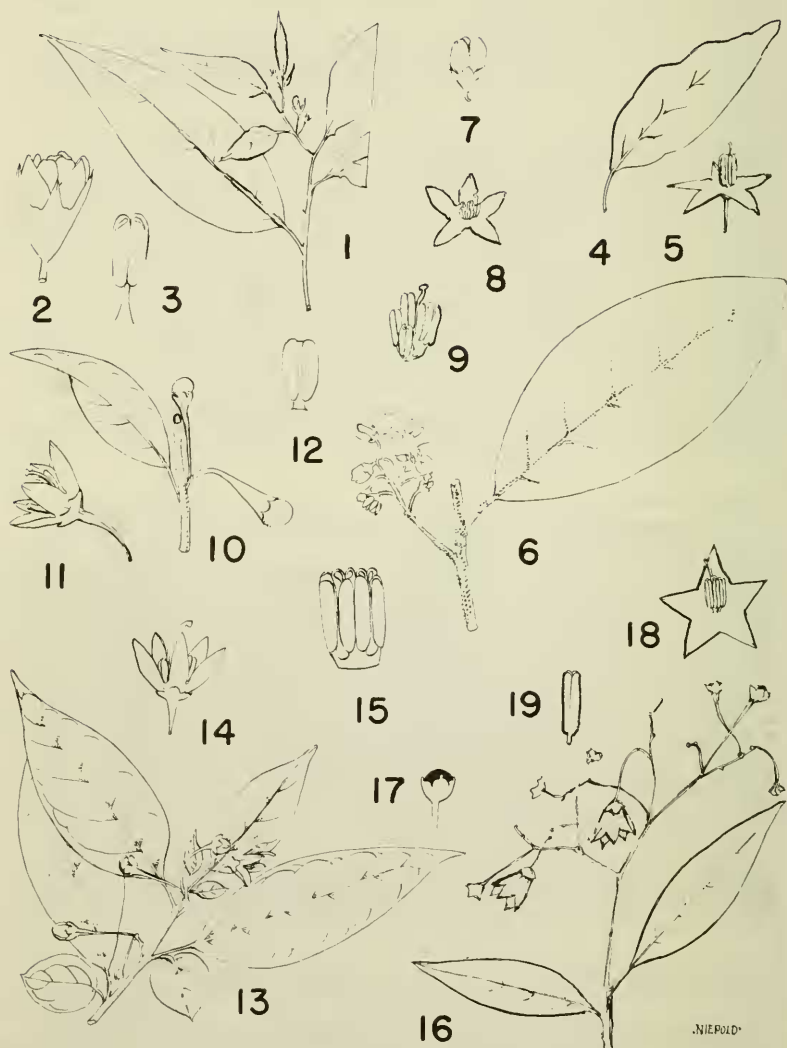
PETUNIA MACRODACTYLON, sp. nov.

P. variabilem R. E. Fries valde simulans sed pilis brevibus, stigmatibus vix bifurcatis differt.

PLANTA herbacea vel suffruticosa, humilis, ramosissima; caulibus flexuosis, pilis brevibus rigidis glandulosis vestitis; FOLIIS laxis, patentibus, subaequalibus, oblanceolatis vel spathulatis, apice rotundatis vel subacutis, basi attenuatis, 21 mm longis, 7 mm latis, planis; PEDICELLIS per anthesin 4 mm longis, dein reflexis et 10 mm longis; CALYCIS tubo late obconico, 2-3.5 mm alto, lobis inaequalibus, anguste triangularibus, obtusis, ad 7 mm longis, fructiferis amplificatis; COROLLA infundibuliforme, 18-20 mm longo, lobis brevibus, late rotundatis; STAMINIBUS profunde inclusis; STIGMATE disciforme, parva. Pl. XII, fig. 7: Leaf x 1/2; fig. 8: Flower x 1; fig. 9: Fruit x 1; fig. 10: Style x 2.

BRAZIL: Santa Catarina: Curitiba: In thicket, Ponte Alta do Sul, alt. 900 m, April 19, 1962, Reitz & Klein 12588 (US, type; HBR).

## Plate I



.NIEPOLD.

Fig. 1-3: *Solanum delicatulum*; fig. 4, 5: *S. maioranthum*;  
 fig. 6-9: *S. reitzii*; fig. 10-12: *S. dusenii*;  
 fig. 13-15: *S. microrbitum*; fig. 16-19: *S. pabstii*.

## Plate II

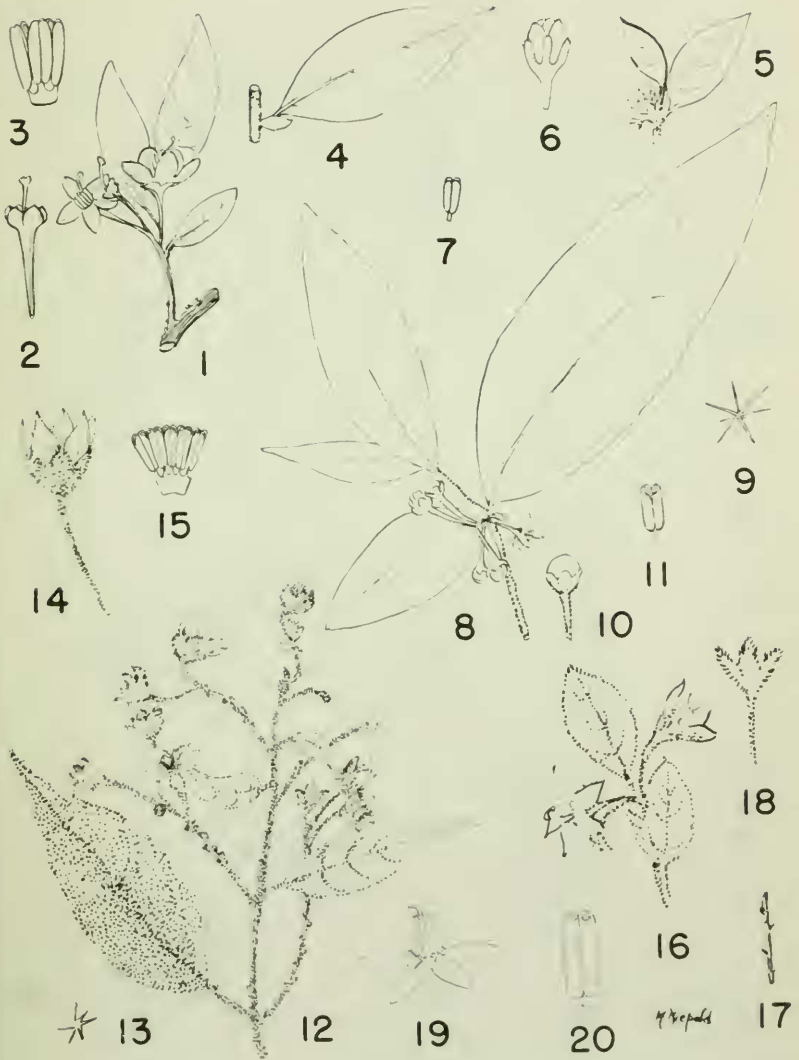


Fig. 1-3: *Solanum cataractae*; fig. 4-7: *S. pavimenti*;  
 fig. 8-11: *S. schwackeanum*; fig. 12-15: *S. subsylvestris*;  
 fig. 16-20: *S. kleinii*.

Plate III

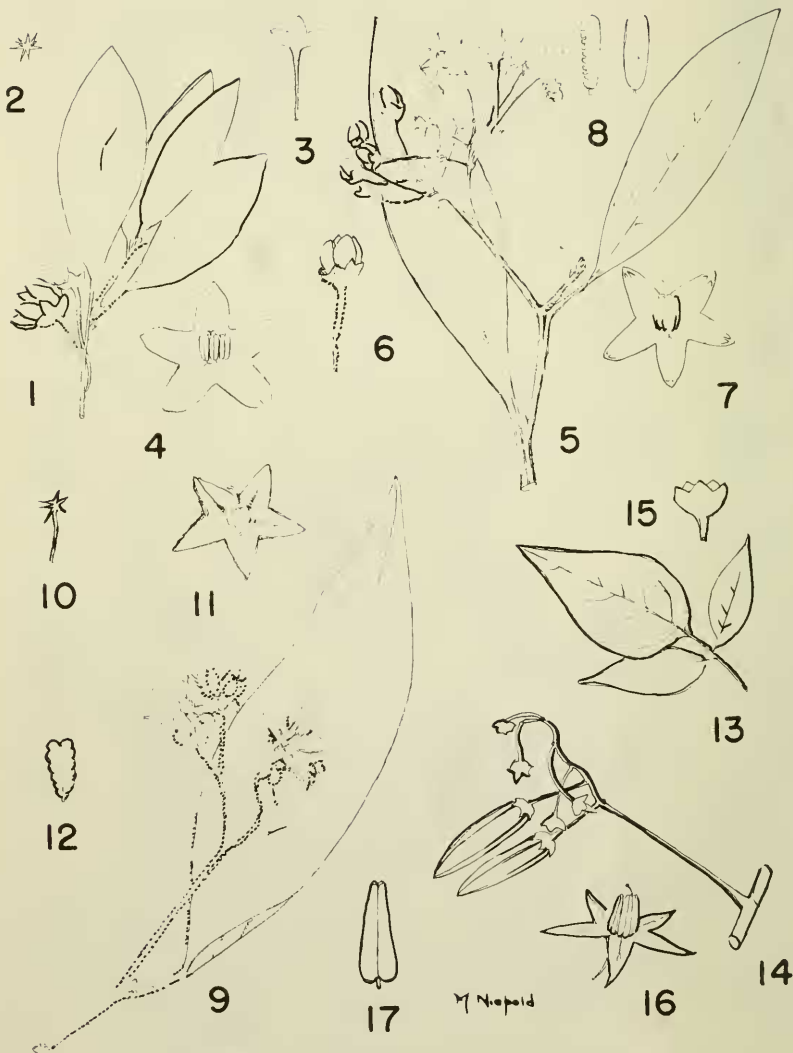


Fig. 1-4: *Solanum cassioides*; fig. 5-8: *S. compressum*; fig. 9-12: *S. xiphocephalum*; fig. 13-17: *S. fusiforme*.

## Plate IV

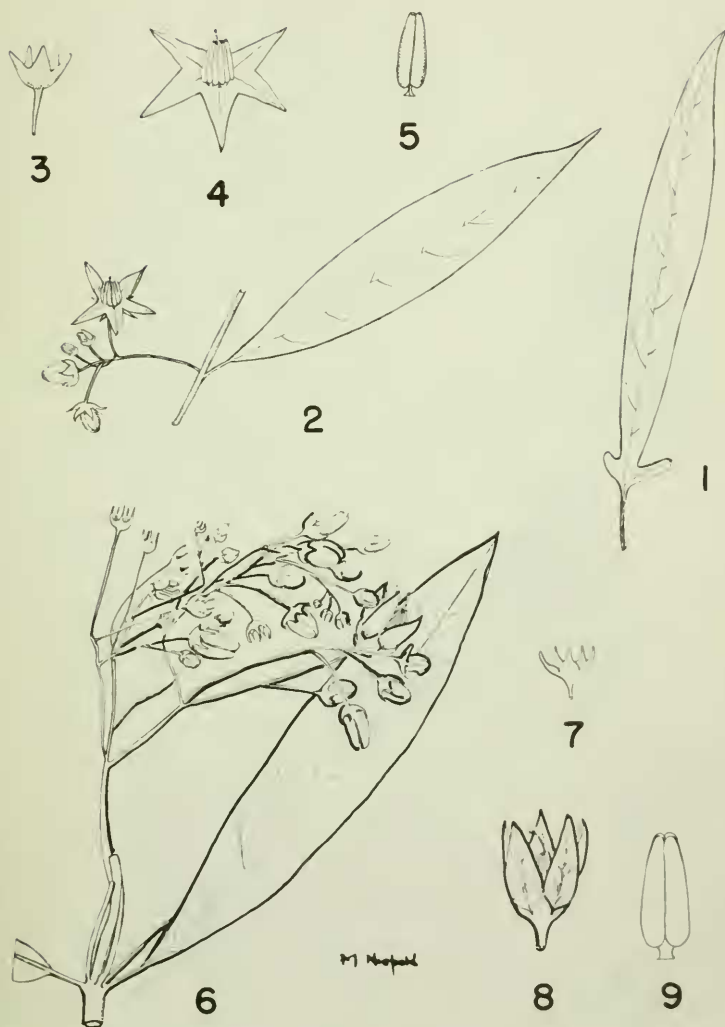


Fig. 1-5: *Solanum subhastatum*; fig. 6-9: *S. matadori*.



Plate V



Fig. 1-5: Solanum bistellatum.

Plate VI



Fig. 1-5: *Solanum brusquense*.

Plate VII



Fig. 1-6: *Cyphomandra macrophylla*.

Plate VIII

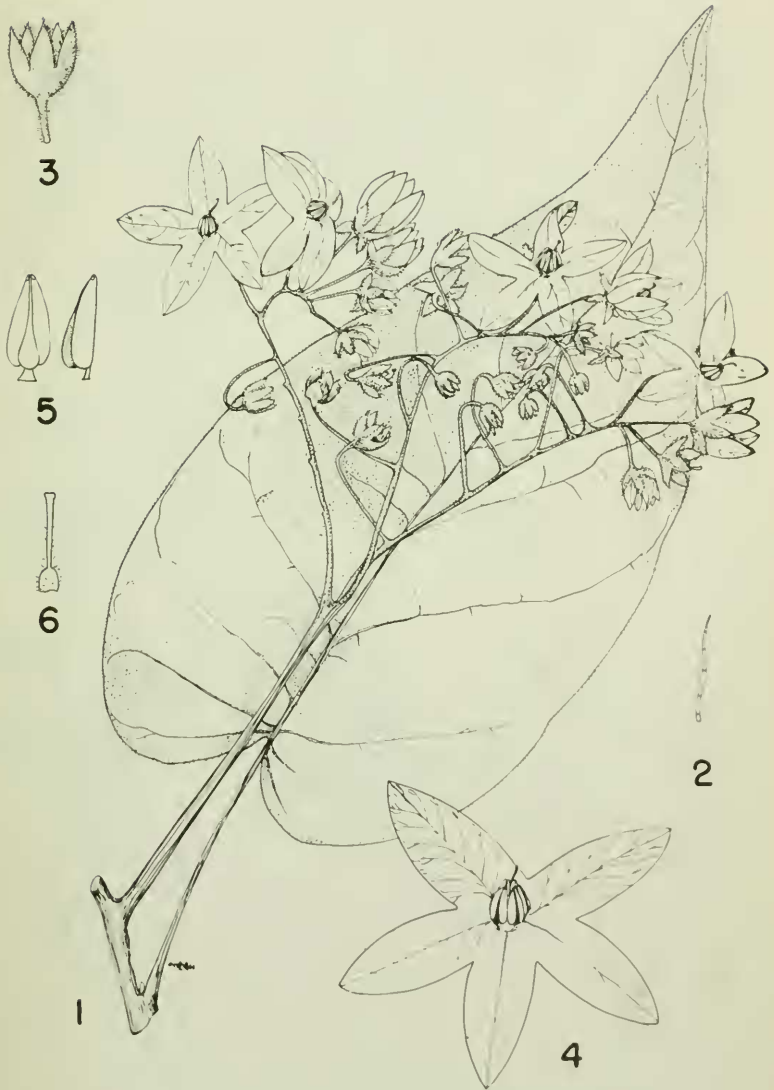


Fig. 1-6: *Cyphomandra mortoniana*.

## Plate IX

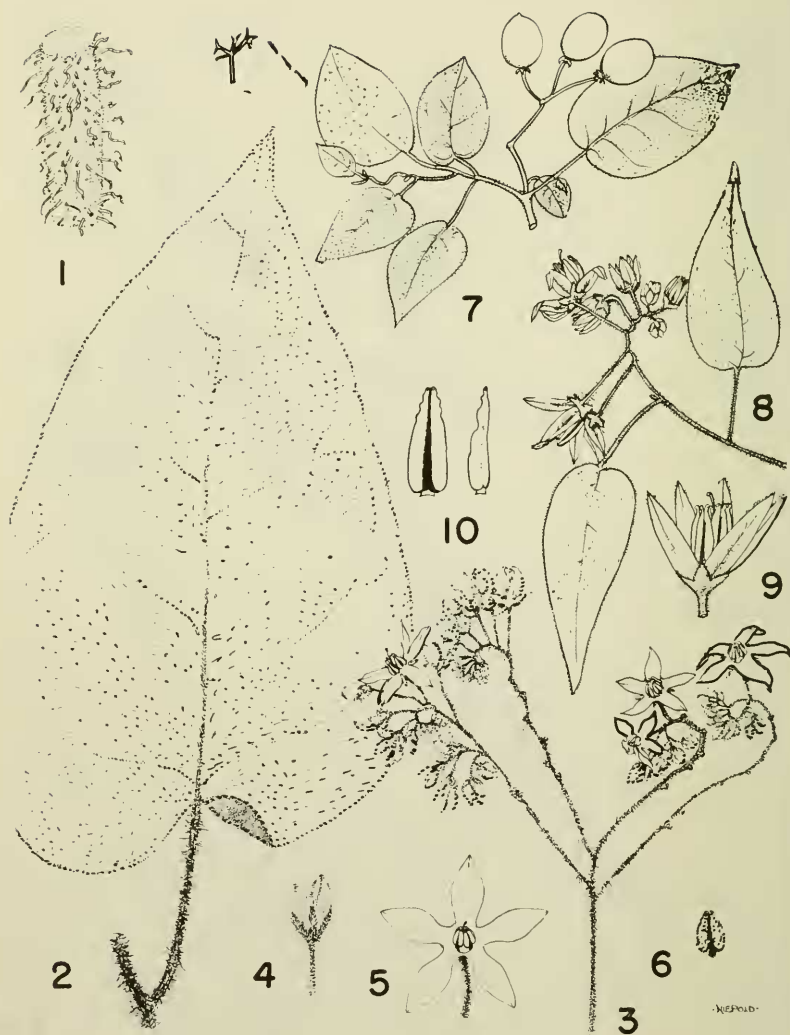


Fig. 1: *Cyphomandra patrum*; fig. 2-6: *C. kleinii*;  
fig. 7: *C. maritima*; fig. 8-10: *C. pinetorum*.

## Plate X

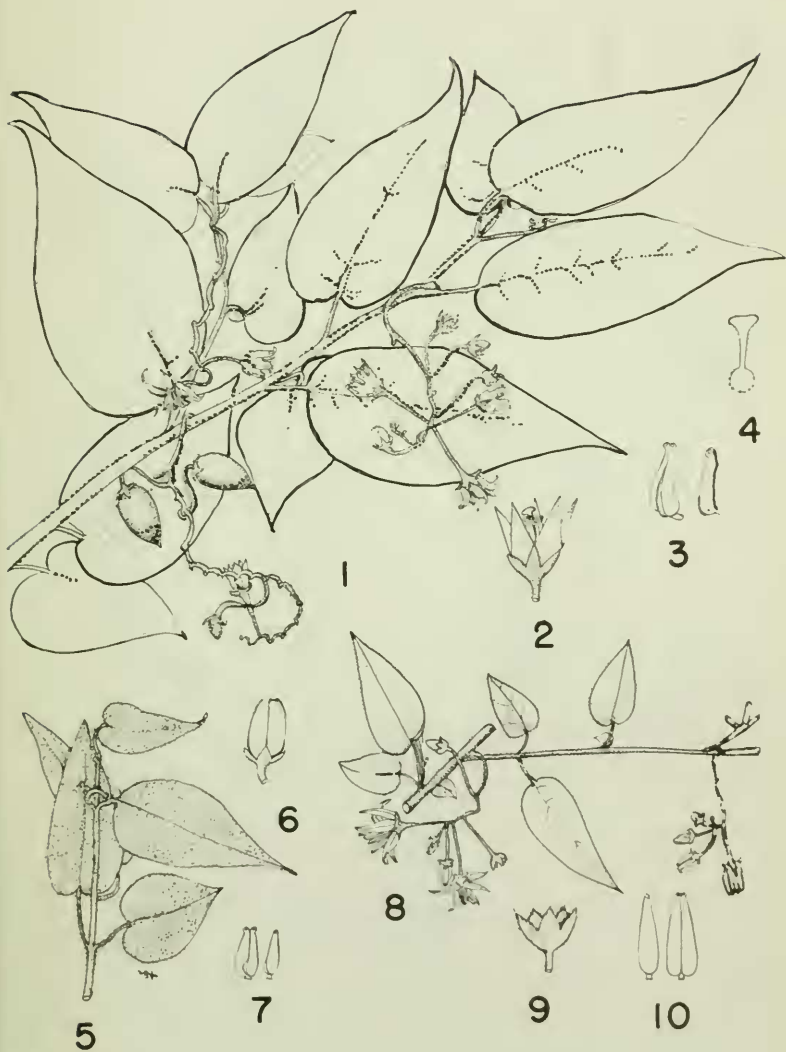


Fig. 1-4: *Cyphomandra reitzii*; fig. 5-7: *C. hispida*;  
fig. 8-10: *C. angustifolia*.

## Plate XI

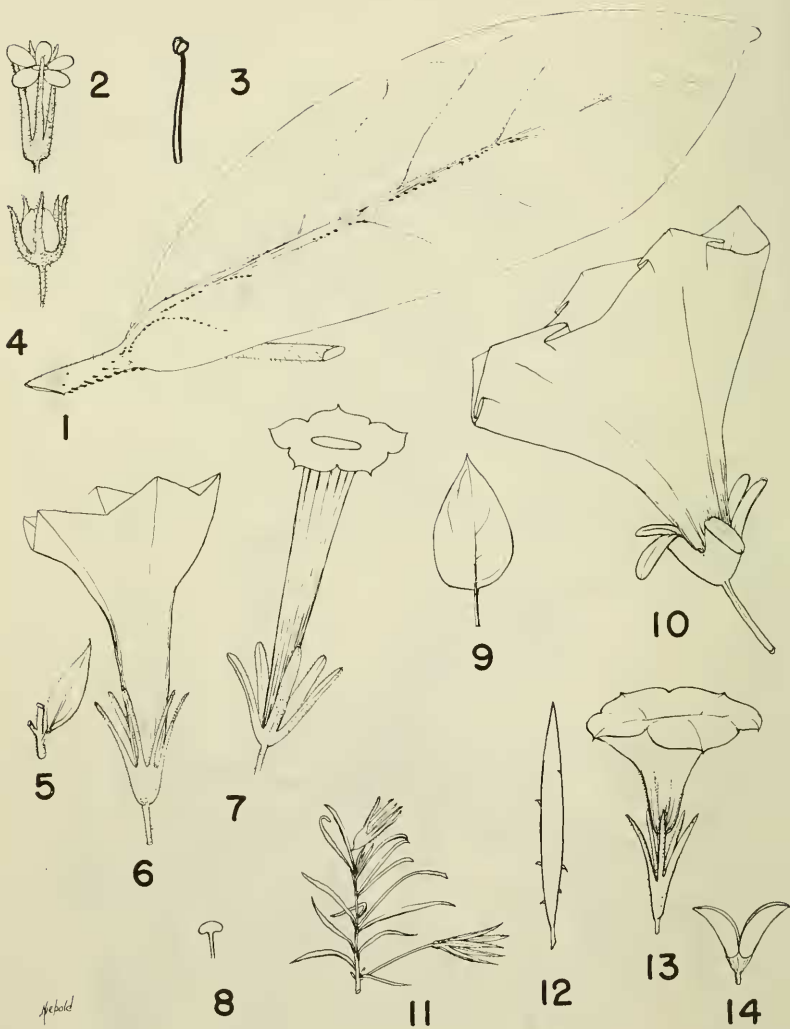


Fig. 1-4: *Nicotiana azambujae*; fig. 5, 6: *Petunia reitzii*;  
 fig. 7, 8: *P. saxicola*; fig. 9, 10: *P. scheideana*;  
 fig. 11-14: *P. serrulata*.

## Plate XIII

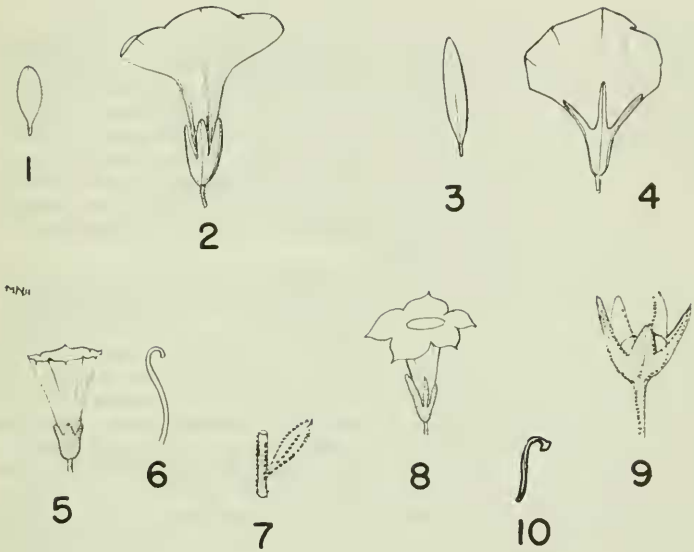


Fig. 1, 2: *Petunia spathulata*; fig. 3, 4: *P. alpicola*;  
 fig. 5, 6: *P. kleinii*; fig. 7-10: *P. macrodactylon*.